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THE WORLD AS FORCE.

[WITH ESPECIAL REFERENCE TO THE PHILOSOPHY OF MR. HERBERT SPENCER.]

BY JOHN WATSON.

No intelligible theory of the universe can possibly be framed or put into words which does not avowedly, or by implication, rest upon the intelligibility of the universe itself. The denial that Nature is the embodiment of Reason carries with it the assumption that the world is beyond the comprehension of intelligence, and, therefore, in the strictest sense, unknowable. And, as knowledge is necessarily a reduction of particulars to a more or less exhaustive universality, or an expression of universality through the particular, the assertion that the world is known in immediate feeling — the assertion, in other words, that the particular alone reveals what is real — destroys at once the possibility of knowledge and the intelligible reality of things. Of this necessary interdependence of intelligence and reality, the advocates of the correlation of Forces seem to have very little comprehension; and, as a consequence, we find them making intelligence one of a series of equivalent and convertible forces, unaware, apparently, that this involves the absurdity of accounting for intelligence by that which is non-intelligent, and of explaining the reality of the universe apart from that which makes it real. "Various classes of facts," writes Mr. Spencer, "unite to prove that the law of metamorphosis, which holds among the physical forces, holds equally between them and the mental forces. * * * That no idea or feeling arises, save as a result of some physical force expended in producing it, is fast becoming a commonplace of science; and whoever duly weighs the evidence will see that nothing but an overwhelming bias in favor of a preconceived theory can explain its non-acceptance." [1] The theory here indicated is that, as mechanical force is expressible in terms of chemical affinity or vital energy, so either of these is convertible with consciousness. Such a view seems hardly intelligible to those who, believing they can show that consciousness is the condition of all reality, claim that it is absurd to place consciousness upon the same level as the objects it renders possible. Anything like a successful attempt to account for the existence and prevalence of some such theory as that of Mr. Spencer, especially among those whose lives have been devoted mainly to physical science, ought, therefore, to be of some profit.

Those who have been led to regard the method of empirical psychology as the only method which preserves the reality of things, by preventing the thinker from overriding and destroying the facts of life, minister to their own self-satisfaction by taunting the speculative thinker with going along the "high *priori* road" he has constructed for himself above and beyond the real world. The charge can only provoke a smile in those who know how wide of the mark it really is. Speculative philosophy makes no pretensions to the "construction" of reality in the ordinary sense of the word, but only to such an explanation of reality as shall account for the facts in their completeness. Its problem is: Given the world as it exists to common consciousness and to physical science, to point out the relation of the different elements of it to each other, when these are viewed *sub specie æternitatis*—*i. e.*, in their connection with intelligence. The futile problem at which the empirical psychologist works is to explain the universe independently of intelligence, to construct an intelligible world out of unintelligible elements. The method which this mode of conception necessitates can get a foundation for its operations only just in so far as it is untrue to itself; it has to assume the rationality of the world by putting into irrational feeling what should in consistency be excluded; and to posit as known that which it virtually denies to be knowable. The speculative method endeavors, by an analysis of the known world as a whole, to get the elements of reality apart, but it seeks to comprehend those elements so accurately as not to leave out of account that side of them which forms their point of connection with each other, convinced that any failure of insight which leads to the isolation of one element of reality from the rest destroys the possibility of the systematic interconnection of the elements as a whole. The only presupposition that speculative philosophy makes is that the world is an intelligible system, in which, as in the living organism, each part exists only in combination with every other part.

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[1] First Principles, p. 217, sec. 71.

It is not unusual for philosophers to appeal to the common consciousness of men in support of their own special theory, or of that part of it which is apparently furthest removed from popular preconceptions. When the Sensationalist wishes to convict the Idealist of a supposed disposition to spin the universe out of his own individual consciousness, he appeals to the common sense of men to support him in his declaration that mere "ideas" can never bring the mind in contact with a real universe, and that it is through the senses the knowledge of that real universe can alone be obtained. The common sense of men eagerly assents. When the modern Materialist desires to obviate the unpalatable character of his theory, he talks cunningly of the world as a system of law, and of the absoluteness of the quantity of matter and of force, and appeals to the popular judgment in support of his assertion that we have no capacity within ourselves to make or unmake a single particle of matter, or to increase or diminish the amount of force stored up in the universe. The unphilosophical man sees at once that the Materialist is right. The Idealist, in turn, may appeal to the higher nature of man, in support of his view that, without intelligence, no orderly universe whatever could be shown to exist, and that all things must come from the hand of an Infinite Intelligence, whose work they are. Again the "practical" man is convinced. Common sense is the authority to which all may confidently appeal, provided, only, that a popular turn be given to the expression of the theory, so as to prevent the awakening of a distrustful reflection. Now, surely, the lesson taught by this peculiar fact is, not that all philosophical theories are equally indorsed by the common consciousness, but rather that the appeal to such an authority is essentially absurd. The common sense of men is not to be despised, but the attempt to prop up a philosophical theory by an authority that is compatible with any system whatever, simply because it dwells in a region into which the divisive energy of philosophical reflection has not as yet made its way, is even more absurd than for a physicist to appeal to the same authority against some view of his brother physicist. We may either say that common sense holds in solution all philosophical theories, or we may, with equal propriety, say that it lies outside of them all; but, from either point of view, it is valueless as a criterion of philosophical truth.

This view of common sense, as of no authority in the decision of philosophical questions, will probably be accepted without much hesitation. More difficulty will be felt in admitting that physical science, including physiology, is equally helpless to determine any of the controverted questions in regard to the nature of the world as a whole, or in regard to the nature of knowledge. No assumption is more persistently and triumphantly paraded before the public than this: that the determination of such questions must be sought in the discoveries, and by the method, of the special sciences. Such a claim rests upon a confusion between the *data* for a comprehensive philosophy, which must be sought from all the sources of human knowledge, and the metaphysical theories of those who seek, by formulating the unsifted categories of science, to construct a philosophical theory of the universe. The fact that, to a certain extent, physical science and philosophy deal with the same *data*, easily leads to the unjustifiable supposition that the latter is merely a branch of the former. But the method and object of each differ completely. Science deals with space, for example, *in concreto*—*i. e.*, with points, lines, figures, etc.—but not with the question of the relation of space to intelligence; it makes use of conceptions of matter, motion, and force, but with these only as they are taken up ready-made by external reflection. The problem as to the conditions of reality—or, what is the same thing, as to the relation of intelligence and existence—cannot possibly be affected by science, as such, simply because science never touches the problem at all.

If this view of the impartiality as regards philosophical questions, maintained by common sense and by physical science, be correct, much of current speculation upon the nature of real existence, and of real knowledge, must be pronounced completely beside the mark. When a writer proceeds upon the supposition that existence is full-formed independently of intelligence, and that the problem of philosophy is to explain how individual men, or successive generations of men, conceived of as a number of individuals, have gradually apprehended it, he simply betrays that he has not asked the initial question, without which no true philosophy can come into existence; for it admits of the most perfect demonstration that any account of knowledge that starts from the assumption that reality is independent of intelligence must end, if only it be carried forward to its results, in denying reality and destroying the possibility of knowledge. It is this false assumption that has led Mr. Spencer to speak of consciousness as a force convertible, like other forces, into molecular processes, and to put forth a theory of knowledge that is really a theory of absolute and irremediable ignorance. In attempting to justify this charge in detail I shall, in the present article, confine myself mainly to the third chapter of the second part of Mr. Spencer's "First Principles," preparatory to a consideration, at some future time, of his developed view of the "persistence of force."

It does not require very much reflection upon the statements in the chapter in question to make it apparent that, all through, Mr. Spencer assumes that there is a real universe existing in its completeness in absolute independence of all relation to intelligence. Now, there is no reason to deny that, taking one aspect of common sense and of natural science, there seems to be the strongest support for this supposition. The ordinary attitude of the plain man is that of a spectator who observes directly before him certain real things and persons that he seems to apprehend as they exist full-formed and complete in themselves. His doubts as to reality, if he have any, do not concern the possible illusiveness of existing things, but only the possibility of misapprehension on his own part. In like manner it is a presupposition of the observations and experiments of the scientific man that the world exists complete in itself, and lies there ready for apprehension. He knows that effort on his own part is the condition of the knowledge of things, but he never supposes that the presence or absence of such knowledge has anything to do with the reality of existence. A philosopher, therefore, who appeals to common sense and to science in support of his assumption that the world is independent of conscious intelligence has the apparent support of both. But the support is only apparent. Ask the man of common sense, or the scientific man who is innocent of philosophical theory, whether the world he regards as real is not, after all, a world of mere appearances — a world as it seems, but is not — and he can only be made to understand the question by a series of explanations that take him beyond his ordinary point of view, and awaken him, as by a shock, to an elementary conception of the problem of Philosophy. Prior to this, he had taken for granted that knowledge and reality are one, and, hence, it is just as easy to show, by an appeal to common sense and science, that reality is bound up with intelligence, as to show that it is independent of intelligence. The separation of thought and nature — knowledge and reality — does not present itself to ordinary consciousness at all; and, hence, the empiricist and the idealist may with equal confidence appeal to it, secure of an apparent support. But this simply shows the absurdity of the appeal. Philosophy begins by discerning the possibility of a breach between knowledge and reality, and its task is to show either that they coincide or that they do not. It is, therefore, utterly unpardonable in a philosopher to begin with the assumption of the non-dependence of reality on intelligence, for such an assumption just means that so far he has not got to the philosophical point of view. Nor is this all, for such a supposition is not only unjustifiable, but leads to a perverted view of the relation between knowledge and reality, as will appear from an examination of Mr. Spencer's procedure.

Between the first view of the world as a congeries of individual objects connected together by the superficial unity of space and time, and the scientific view of that world as a system of forces, there lies a wide interval during which intelligence has been becoming more and more active — on the one hand observing the infinite complexity of the determination of things, and on the other hand finding them united by higher and closer bonds of unity. But, as the process by which intelligence develops itself is looked upon by the scientific man, not less than by the man of common sense, simply as a process by which the properties and the relations of objects in a world independent of consciousness are discovered by the individual observer, the correlative evolution of intelligence is neglected. Science finds it necessary to systematize its knowledge by means of the conceptions of matter, motion, and force, but these conceptions are looked upon as purely objective, or independent of thought. In this assumption, science, as such, is perfectly justified, since its task is to point out what are the properties and the relations of things to each other — not to inquire into the relation of knowledge and reality. But he who constructs a philosophical theory may not take up from the special sciences, without criticism, the conceptions they are compelled to use, and proceed to explain knowledge on the assumption of the complete determination of objects independently of intelligence. This, however, is what Mr. Spencer, in the present instance, does. The order his exposition ostensibly follows is to treat first of Space and Time, then to go on to Matter and Motion, and to end with Force, "the ultimate of ultimates," as he calls it. The real order of his thought, however, is to start from the conception of Force, next to go on to Motion and Matter as presupposed in Force, and finally to come to Time and Space as implied in Motion and Matter. Now, this just means that he assumes the independent reality of the world as it exists for science, and then proceeds by analysis to get back to the simplest and most abstract elements of that world. The true order is exactly the reverse. The world, as absolutely unthinkable apart from intelligence, presupposes the putting together of more and more concrete elements, so that, while Space, as the mere abstraction of external individuality, is in the order of thought and of the evolution of intelligence, the abstractest and simplest element of all, Force, as comprehending in a more concrete unity Time, Matter, and Motion, is the last and highest conception of all. The process of abstraction or analysis by which Mr. Spencer gets his results is merely a process by which the intelligible character of the universe is denied, just because it is tacitly assumed.

The next step of Mr. Spencer is to explain how a world already assumed to be known gets into the individual consciousness. The method of explanation is exceedingly simple. It consists in plausibly explaining how a world already known communicates itself to the individual through his senses. The senses are said immediately to reveal objects as resisting, and the feeling of resistance is identified with Force. As the conception of force already presupposes the whole process by which it has been arrived at, we thus get, by an act seemingly of the simplest kind, the materials from which Motion, Matter, etc., may be apparently obtained by analysis, without any synthetic activity of thought whatever. The derivation of all of the elements assumed to constitute reality is thus secured beforehand, and we have only to take, at each fresh stage of our progress, as much from the intelligible world as we find convenient, to give a plausible derivation of reality from immediate feeling. Thus the dependence of real existence upon intelligence is got rid of by the convenient method of assuming beforehand what we pretend to derive by a process of immediate apprehension. Nothing could be simpler, and nothing more useless and delusive, than a method such as this, which simply sets forth, as the process by which the knowledge of reality is obtained, that which has been tacitly assumed at the outset. Before turning directly to Mr. Spencer's account of Space and Time, with which he begins his exposition, a few words upon what we conceive to be the true nature of those conceptions may not be out of place.

When we proceed to examine the world of experience with a view to a reflective comprehension of the elements it contains, it becomes apparent that the simplest element with which we can possibly start involves a synthesis of universality and particularity in their most attenuated forms. The world of experience is a world that is known, and no knowledge is thinkable that does not imply the comprehension of differences by thought. Intelligence and Nature reciprocally imply each other, so that either is a fiction of abstraction apart from the other. Now, the simplest form in which the external or material universe can be thought of is as a pure self-externality, which is yet a unity. This simplest and most attenuated form of the unity of universal and particular is what must be understood by the world as pure space. Space is absolute or perfect externality, because every part of space is external to every other, and between the different parts there is no distinction except that they are out of each other. But, as the parts are all absolutely alike, the distinction of parts is no distinction; space is only external to itself. The particularity, therefore, is just as much universality. And the universality is no less particularity. From the point of view of reality, space may be said to be one space uniting an infinity of spaces; from the point of view of intelligence, it is the simplest phase of thought, in which universality and particularity are so attenuated as to be inseparable and indistinguishable. In other words, the concrete objects known in experience are here reduced to their vanishing point, and it is found that the barest reality involves the reflection of the particular into the universal.

This view of the matter has important consequences. If the poorest and most abstract form in which the external world can be thought at all involves the synthesis of universal and particular — or, what is the same thing, from the side of intelligence, the reflection of immediate feeling into thought — it is vain, at any subsequent stage of intelligence, to attempt the explanation of reality as the purely individual, or of the knowledge of reality as built upon simple, unmediated consciousness. Any attempt to account for extension as revealed by pure feeling, whether it takes the form of Locke's confusion between touch as a mere feeling and body as that which is distinct from, and yet related to, feeling; or Hume's shuffle between "colored points disposed in a certain manner" and individual sensations of sight and touch; or Mr. Bain's confusion between muscular sensations and extended bodies; or Mr. Spencer's identification of feelings of resistance with objects that resist — all such attempts involve the inconsistency of explaining that which is intelligible by that which is unintelligible. From the mere particularity of feeling the universal can by no possibility be extracted; and, hence, even if it be granted that particular feelings might possibly reveal a succession of *Heres* or particular spaces, it would not be possible to explain the combination of spaces in one space, without having recourse to the universalizing power of thought. The difficulty is infinitely increased when it is considered that a succession of feelings can never give rise to coexistent spaces. Thus, at the very outset, a regard for facts compels us to say that space, as the unity comprehending particular spaces, can only be known by an intelligence that brings the particular within the grasp of its own universality. On the other hand, the opposite fault of the abstracting intellect — the isolation of the universal from the particular — is equally guarded against by the analysis of space just made. Kant's conception of space as a pure form of our sensibility commits the mistake of fixing upon the unity of space to the exclusion of its particularity; for, while particular spaces that are completely isolated from each other could never give rise to the conception of one world of things in space, pure space, as the exclusion of particular spaces, is no less an unthinkable abstraction. The concrete unity resulting from the reflection of particular spaces into one universal space is just the barest and simplest form in which the material world can be thought of at all, and the isolation of either element must result, in the long run, in the overthrow of real knowledge. Hence it is that, while the Sensationalist's account of space as an immediate revelation of feeling issues in the denial of all externality to objects, the Kantean position that space is a bare form at length revenges itself in the denial of any knowledge of things in themselves. Particular feelings, supposing them to exist in consciousness at all, can never take the individual beyond his own subjective states, and the conception of space as a mere form does not allow of the apprehension of the world and the mind as they really are.[2]

The above analysis also guards against the supposition that Space can, in any proper sense, be a limitation of intelligence. The supposed limitation derives its plausibility from the assumption that the world, as spacial, is independent of intelligence. But, as space *per se* is pure externality, it can only exist in relation to a comprehending intelligence, that manifests itself in its simplest form as a self-externality, that is just as much self-internality. Space cannot limit thought, because, without thought, space itself could not be real. Nor, again, are spacial relations applicable to intelligence or reality in all its modes; the simplest manifestation of intelligence cannot be carried along so as to prevent the elevation of intelligence into higher forms. On the contrary, the universalizing power of thought must manifest itself by increasing its own complexity, and, at the same time, the complexity of the world. That unity in diversity which meets us in space, rather as a prophecy than an accomplished fact, must manifest itself in the richer and concreter manifestations of the real world; and to this growing complexity there can be no limit until every element of difference has been reduced to a perfect unity. This process is exhibited in germ in the conception of things, as in Time.

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[2] For an exhaustive criticism of Kant's view of Space and Time I am happy to be able to refer to Professor Caird's "Critical Account of the Philosophy of Kant" (see, especially, pages 267, 603), a remarkable work, that ought to effect a revolution in English methods of philosophizing.

As Space is the abstraction of mere externality or individuality, so Time is the abstraction of pure internality. In the one case, things are conceived as absolutely out of each other, so that the world is regarded solely in its statical aspect; the latter views things as issuing from each other, and, hence, it looks upon the world of things in their dynamical aspect. Objects that are thought of simply as in space are regarded as utterly indifferent to each other, and, hence, change, in any form, is excluded; at the same time, all objects are a totality, and this totality is, in its abstract form, space as one space. In the conception of Space as a unity of spaces there is, therefore, involved implicitly the connection of things with each other, and, therefore, the change of one into the other; and this notion of change, in its crudest form, is Time. The same factors of universality and particularity are here involved; pure Time is unthinkable, and, therefore, unreal; and mere times are equally unintelligible. Time is the abstract unity of permanence and change. The *Now* exists only relatively to other *Nows*, and the unity of all *Nows* is Time as relatively concrete. Nature, as changing, is the synthesis of permanence and succession. Intelligence, manifesting itself as Nature, is the synthesis of the abiding universal and the changing particular. A merely feeling consciousness, a consciousness having no universality in it, could not be conscious of Time, because the particular is not of itself a possible object of thought. Hence the absurdity of attempting to account for Time from the changing phases of individual consciousness. Only the universal or permanent can comprehend the particular, and a purely feeling consciousness, which *ex hypothesi* changes as the moments of Time change, could never grasp together the different *Nows* of Time, and, hence, could never become conscious of *Time* at all. On the other hand, as was remarked of Space, Time is not a mere form or abstract universal, for in that case all distinctions in Time — and, therefore, Time itself — would be unknowable. Kant's conception of *Time*, as pure, unmediated universality, is as faulty as the sensationalist's assumption that *Time* is pure particularity. Time is neither the one nor the other, but both; as an expression of the nature of intelligence, it is a universal that is mediated and defined through the particular. It need hardly be added that Time, as one of the simplest manifestations of thought, is no limitation of thought; that which is a manifestation of intelligence cannot frustrate the necessary development of intelligence. Thought must go on from the conception of abstract self-evolution to the conception of the world as a concrete process of becoming. Having so far negated the mere externality of things as to conceive of them as passing into each other, and yet abiding by themselves, it must, in order to explain the universe as it really is, show that Space in itself and Time in itself are but the simplest elements in a world that is one, and yet infinitely diverse.

If the above is anything like a true account of what is implied in the conception of Nature as spacial and temporal, the derivation given by Mr. Spencer of space and time, preparatory to his reduction of all phenomena to Force, at least in so far as it is self-consistent, is so radically false as completely to reverse the relation of Intelligence and Nature. That explanation is, briefly, as follows: "Of those relations which are the form of all thought there are two orders, relations of sequence and relations of co-existence, the former being original and the latter derivative. The relation of sequence is given in every change of consciousness. The relation of co-existence, which cannot be originally given in a consciousness of which the states are serial, becomes distinguished only when it is found that certain relations of sequence have their terms presented in consciousness in either order with equal facility; while the others are presented only in one order. Relations of which the terms are not reversible become recognized as sequences proper, while relations of which the terms occur indifferently in both directions become recognized as co-existences. By endless experiences an abstract conception of each is generated. The abstract of all sequences is Time. The abstract of all co-existences is Space.

Our conceptions of Time and Space, then, are generated, as other abstracts are generated from other concretes; the only difference being that the organization of experiences has, in these cases, been going on throughout the entire evolution of intelligence. The experiences out of which the abstract of co-existence has been generated are experiences of individual positions as ascertained by touch, and each of such experiences involves the resistance of an object touched, and the muscular tension which measures this resistance. By countless unlike muscular adjustments different positions are disclosed; but since, under other circumstances, the same muscular adjustments do not produce contact with resisting positions, there result the same states of consciousness, minus the resistance, and from a building up of these results Space. Similarly in regard to Time, the abstract of all sequences."[3]

This passage contains an admirable illustration of that mixture of common-sense Realism and individualistic Sensationalism which runs through the whole of Mr. Spencer's philosophy, and, indeed, through all empirical psychology. It is really an attempt to combine two discordant views that are not capable of union, and which, therefore, are simply applied to each other without being united, as the surfaces of two chiseled stones may be brought into close contact without being joined together. In our unreflective experience of the world we are as far as possible from supposing that the objects we know are resoluble into our own passing feelings; on the contrary, we tacitly assume that the world *we* know is the world as it really is — the world as known by everybody else. It is, no doubt, true that we look upon ourselves and others as independent individuals, and that this assumption, when made explicit, leads to the view of Sensationalism that the only way in which things are known is through our subjective feelings. We may, therefore, say that common consciousness assumes, indifferently, that the known world is objective and intelligible, and that it is subjective and sensuous; unreflective consciousness, in short, is, implicitly, at once idealistic and sensationalistic, although, explicitly, it is neither the one nor the other. Mr. Spencer's procedure is to accept both the Realism—*i. e.*, the tacit Idealism of common sense—and its contradictory Sensationalism. Accordingly, he does not scruple to speak of relations of sequence and relations of co-existence as if they were given in complete independence of intelligence; and, hence, the only question, as he puts it, is how the individual comes gradually to appropriate objects through his own particular and perpetually-changing feelings. From this way of stating the question the absurdity of trying to build up a stable universe out of evanescent sensations is concealed both from Mr. Spencer himself and from the unwary reader; because, having an intelligible universe always before their consciousness, it is overlooked that individual feelings, as unrelated, are in the most absolute sense unintelligible. It is not seen to be a contradiction to identify successive feelings of touch and of muscular sensation with "relations of sequence," and even with "relations of co-existence," although it seems plain enough, the moment it is stated, that feelings, as such, cannot be "relations" of any kind whatever. Proof of this charge of self-contradiction is so important in itself, and has so decisive a bearing upon the doctrine of Force as conceived by empirical psychologists, that a detailed examination of Mr. Spencer's derivation of the conceptions of Space and Time may be excused. The "relation of sequence" is primary, because "given in every change of consciousness;" the "relation of co-existence" is secondary, because it "cannot be originally given in a consciousness of which the states are serial." How, then, does the consciousness of co-existence arise? From the fact that "certain relations of sequence have their terms presented in consciousness, in either order, with equal facility, while the others are presented only in one order." Here it is quite evident that Mr. Spencer is trying to explain how we come to experience a world of co-existent and successive objects, conceived in the first place as independent of consciousness. Now, a world in which events are "presented only in one order" is, in other words, a world in which the events are connected in an irreversible or uniform order, *i. e.*, in which they are connected together as cause and effect. Such a world, therefore, is already constituted by universal forms of thought, involving, not only intelligence, but intelligence that has developed itself by very complex relations. And a necessary and uniform sequence of events is very different from a supposed sequence of feelings, as they occur in "a consciousness of which the states are serial." No doubt there is a point of view from which it can be shown that the serial states of consciousness imply a uniform sequence in the way of causality, but such a view can only be justified by a theory which undertakes to set forth, in systematic order, the different elements that conspire to produce a rational universe — a universe that, apart from Reason, is nothing; not by a theory that proposes to account for a ready-made universe which is independent of Reason. That Mr. Spencer is committed to the latter stand-point is evident even from his attempt to account for relations of co-existence by relations of sequence; and it is still more apparent from the fact that co-existence is afterwards explained as a compound of feelings of touch and, muscular sensation. His method, then, is to identify "relations of sequence" with the mere sequence of feelings, in a "consciousness of which the states can only be serial;" and, having thus assumed uniform relations of sequence, the only thing requiring explanation seems to be, how these give rise to relations of co-existence. But a sequence of feelings conceived to occur in a purely individual consciousness is as far as possible from being identical with the objective sequence of real events in an intelligible world. The former is, *ex hypothesi*, not irreversible, but arbitrary; not objective, but subjective. The latter is necessary, uniform, and unchanging, and involves the actual relation of objects as identical in the midst of change, and as necessarily connected with each other. The one excludes all relation, the other involves a complexity of relations. It is, therefore, utterly impossible to extract from the sequence of states, in a purely individual consciousness, any objective order of events; and there is no reason whatever for deriving co-existence from sequence, except the unwarrantable confusion between the causal sequence of events and the arbitrary sequence of individual feelings. And this brings us to remark, secondly, that "relations of co-existence" are not separable from "relations of sequence" in the way assumed by Mr. Spencer. We may distinguish the causal connection of events from the reciprocal influence of co-existing substances upon each other, but the intelligent experience of reality involves both. It is not possible to be conscious of events as uniformly sequent, without being conscious of substances as reciprocally dependent upon and influencing each other; or, to take experience at an earlier stage, it is not possible to think of events as following upon each other in time, apart from the thought of things as co-existing in space. The experience of the one implies the experience of the other; and, hence, any attempt to get the one without the other is an attempt to apprehend one element of the real world apart from another element that is necessary to make it real. We may, certainly, ideally distinguish the elements, but in our analysis we must be careful to leave room for such a synthesis as shall exclude all actual separation. That this is not Mr. Spencer's view would be evident even from the fact that he makes relations of sequence primary, and relations of co-existence secondary — exactly the reverse of the true order of connection, as our analysis of Space and Time has shown.

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[3] First Principles, pp. 163–165, sec. 47.

Having plausibly derived relations of co-existence from relations of sequence, Mr. Spencer tries to show that Space and Time are "generated as other abstracts are generated." The same paralogism of individual feelings and relations of thought again presents itself. We start from the world as given in ordinary consciousness — the world as implicitly rational — and ask how, supposing we have a knowledge of co-existent and successive objects, abstract Space and Time are produced? There can be no difficulty in giving an apparently satisfactory explanation, because in our *datum* we already have implicitly that which is to be established. Things as co-existent and successive are spacial and temporal, and by simply analyzing what is contained in our ordinary knowledge, and abstracting from all the differences of objects, we easily get

Space and Time as residue. Mr. Spencer, in other words, when he speaks here of Space, has before his mind Space as the object of the mathematical sciences. Now, mathematics does not find it necessary to inquire into the relation of Space to intelligence; as a special science it is sufficient for it to assume its object as ready-made, and to examine the various ideal limitations of it from the phenomenal point of view Mr. Spencer, therefore, has, in his conception of space as the "abstract of all co-existences"—an abstract that is supposed to be obtained by mere analysis of a preëxistent material — a ready means of emptying intelligence of its universal relations. Just as, when he has to account for co-existent objects, he first identifies the mere sequence of feelings with the necessary or objective sequence of events, and thus apparently gets into feeling the conception of permanent substances; so here he assumes that objects as offering resistance are given in feelings of touch, and, hence, easily derives empty space from muscular tensions unassociated with feelings of resistance. It is hardly necessary to repeat that individual feelings, however numerous, cannot possibly account for the knowledge of extended things or of extension, since such feelings are assumed to be destitute of that universality which is the condition of any knowledge whatever. Mr. Spencer seems to suppose that, by throwing the supposed experience back into the haze of the past, and imagining a vast period of time to have elapsed, during which the race has been accumulating knowledge, the intellectual elements of experience may be resolved into felt elements. But this is an utterly untenable position. The very beginning of intelligent experience, whether in the individual or in the race, must contain the elements necessary to such experience, and these elements cannot be reduced to lower terms than a synthesis of subject and object, of the universal and the particular. A purely feeling consciousness, assumed to exist for an infinite period of time, would still be a feeling consciousness, and, until it emerged from this unintelligent state, and by a primary act of abstraction separated and united the object and the subject, it could have no experience of the world at all, and, therefore, no experience of a world as spacial. Mr. Spencer really confuses the unreflective consciousness, which does not sharply separate subject and object, or things and space, with a merely feeling consciousness which, as such, is the negation of that separation. But in the former the two terms are really present, and, although their contrast is seldom explicity perceived, it is still there, ready to be brought out by reflective analysis ; in fact, were it not implicitly there, no amount of reflection could extract it. It is, therefore, a manifest *hysteron proteron* to account for Space as due to mere feelings of muscular tension. In intelligent experience Space and Time are not posterior, but prior, to co-existing and successive objects, as undifferentiated Space is prior to positions—*i. e.*, limitations of Space. Mr. Spencer first identifies feelings of muscular tension with co-existing positions—which, as involving relations to each other, are more than feelings—and next assumes that a synthesis of these positions generates Space. But position already involves the relation of the parts of Space to each other, and, hence, cannot account for Space. In short, just as existing objects presuppose the relation of objects to each other in Space, and, therefore, different positions, so position presupposes a universal Space, which is ideally limited. Space is not a collection of particular spaces, but a universal Space differentiating itself in the particular.

Having found that Mr. Spencer ostensibly derives Space and Time from mere feelings of resistance, which he unwarrantably identifies with the conception of Force, we may be sure that in his account of Matter and Motion the same fallacious method will be resorted to. The account of Matter is, briefly, as follows: "Our conception of Matter, reduced to its simplest shape, is that of co-existent positions that offer resistance. We think of Body as bounded by surfaces that resist, and as made up throughout of parts that resist. * * * And, since the group of co-existing positions constituting a portion of matter is uniformly capable of giving us impressions of resistance in combination with various muscular adjustments, according as we touch its near, its remote, its right or left side, it results that, as different muscular adjustments habitually indicate different co-existences, we are obliged to conceive every portion of matter as containing more than one resistant position. * * * The resistance-attribute of Matter must be regarded as primordial, and the space-attribute as derivative. * * * It thus becomes manifest that our experience of *force* is that out of which the idea of Matter is built."[4]

Here again we have an illustration of that method of accounting for the intelligible world by ignoring intelligence which Mr. Spencer carries on with great self-complacency, and apparently without the least perception of the real nature of his procedure. "Our conception of Matter, reduced to its simplest shape," simply means the real world after we have eliminated by abstraction those prominent elements in it which presuppose an elaborate process of construction by thought. The world as it exists for the scientific man, the world as composed of objects bound together by the law of gravitation, and manifesting physical, chemical, and vital forces, is stripped of all its differentiating relations, and reduced to a congeries of extended and solid atoms, preparatory to the reverse process by which the relations abstracted from shall be surreptitiously brought back and attributed to independent feelings. But, even when thus attenuated to a ghost of its former self, the attempted derivation from feeling is easily seen to be inadmissible. The passage from individual feelings to "co-existent positions that offer resistance," however apparently easy, cannot really be made. We are told of "impressions of resistance," and of "muscular adjustments." Now, an impression of resistance is not a mere feeling, but the conception of an object as resisting, and such a conception involves a construction of reality by relations of thought. Similarly, "muscular adjustments" presupposes a knowledge of the muscular system, or, at least, of the body as it exists for common consciousness, and, hence, relations of thought are inconsistently attributed to mere feeling. If we exclude all that is involved in the relation of a resisting object to the organism as the medium of muscular sensibility, we are reduced to mere feelings that by no possibility can give a knowledge of anything real and external to themselves. Hence the absurdity of assuming that mere feeling gives a theory of matter as a manifestation of force ; hence, also, the absurdity of regarding force as the simplest, instead of the most complex, element of the real world as it exists for the scientific man.

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[4] **First Principles, pp. 166, 167, sec. 48.**

From what has been said it is easy to say why Mr. Spencer regards the "resistance-attribute of matter as primordial, the space-attribute as derivative." It must, at first sight, seem strange that "co-existing positions that offer resistance" should be held to be prior to "co-existing positions" themselves. In the apprehension of resisting positions there is, surely, already implied Space. Mr. Spencer, however, identifies his own theory, that resistant positions are revealed by muscular sensations, with the common-sense apprehension of objects, which, like all knowledge, really involves the implicit reduction of particulars to the unity of thought. Hence Space, although it is involved in the ordinary apprehension of objects in the same sense in which resistance is involved in it, is assumed by Mr. Spencer not to exist for consciousness at all, because it has not yet been made an object of the abstract understanding. Accordingly, the resistance is abstracted from, and there is left, pure Space, as it exists for the mathematician. Here the purely analytical procedure of the empirical psychologist is apparent. The world of objects in Space is supposed to be given apart from thought, or rather by means of mere "impressions of resistance," and, by a further extension of this purely sensible process, the knowledge of Space is supposed to be given by feeling, when in reality it is got by a process of abstraction that presupposes the manifold relations of intelligence by which the world has been put together. Mr. Spencer has not asked himself the proper question of philosophy, How is the real world related to intelligence? but, instead, has put a question that presupposes a false abstraction of reality from intelligence, viz., How does the individual man apprehend by his sensations the real world? The true answer to his question is that, by mere sensation, no reality whatever can be apprehended, and the illusion of such apprehension simply arises from confounding sensation as the first unreflected form of knowledge with sensation as a mere abstraction of one element of knowledge. If it be replied that Mr. Spencer does not base knowledge upon mere feelings, but upon "relations," the answer is that the "relations" do not on his view constitute reality, but are only the modes by which the individual consciousness gradually fills itself up with the preëxistent elements of a supposed real world; and, hence, that, notwithstanding the use of terms implying more than feeling, mere feelings are, after all, assumed to account for reality.

Mr. Spencer's account of Motion is similar in nature to the account of Space, of Time, and of Matter. "The conception of Motion, as presented, or represented, in the developed consciousness, involves the conceptions of Space, of Time, and of Matter. A something that moves; a series of positions united in thought with the successive ones — these are the constituents of the idea. * * * Movements of different parts of the organism in relation to each other are first presented in consciousness. These, produced by the action of the muscles, necessitate reactions upon consciousness in the shape of muscular tension. Consequently, each stretching-out or drawing-in of a limb is originally known as a series of muscular tensions, varying in intensity as the position of the limb changes. * * * Motion, as we know it, is thus traceable to experiences of force."[5]

In treating of Matter, Mr. Spencer betook himself to the conception of the world as it exists for the scientific man, and, neglecting the manifold relations which form the real wealth of the sciences, he fixed his attention exclusively upon Body, conceived as extended and resistant. Now, he refers again to his scientific conception of the world, and, fetching therefrom the conception of Motion, adds it to the elements he has thus far sought to explain. In this way he gets the credit of explaining the origin of Motion without any synthetic activity of thought, while in reality he is simply giving a distorted view of the supposed origination of that conception from feelings — a view that recommends itself to the uncritical reader merely because he fails to see the assumptions it involves.

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[5] First Principles, pp. 167, 168, sec. 49.

Motion is to be explained by feeling, and, for the purpose in hand, muscular tensions are most easily manipulated. "Movements of different parts of the organism," we are told, "are first presented in consciousness." This is an exceedingly facile way of accounting for our knowledge of Motion. The "organism" is assumed, and that means that we are already, at the beginning of knowledge, supposed to have such a knowledge of it as is possessed by the scientific physiologist. Hence the manifold relations of real objects to each other, and the differentiation of the human organism from other organisms, and from inorganic bodies, is taken for granted at the very start. That being so, there can be no great difficulty in accounting for the movements of the organism, seeing that these are already implied in our knowledge of the organism itself. These movements, we are next informed, "necessitate reactions upon consciousness." No doubt they do; but the question is whether such "reactions" can possibly be known by consciousness as reactions, supposing consciousness to be identical with feeling. The assumption that this is really the case derives its apparent force from confusing the mere feeling of muscular tension, which is incapable of giving the knowledge of any reality whatever, with the conception of muscular tension as related to a real, intelligible world. Hence it seems as if feelings of muscular tension, "known as a series," account for motion in the form of "movements of different parts of the organism." But "muscular tensions," as feelings, can only be supposed to give a knowledge of the movements of the organism, because the conception of such movements, and of motion in general, is taken up without criticism from the special sciences. When we make a real effort to explain Motion, we find that it is utterly unintelligible, apart from the other elements dependent upon an intellectual synthesis, to which it is related.

After what has already been said, it cannot be necessary to show at length that "experiences of Force" do not, as Mr.

Spencer would have us believe, precede experiences of Motion, but, on the contrary, presuppose those experiences. It is only by unwarrantably confusing mere feelings of muscular tension with the muscular tensions themselves, as they exist in a real world, which is, at the same time, an intelligible world, that any one could fall into the mistake of setting down as primary and simple that which involves a long and very complex process of differentiation. Force is, no doubt, presupposed in Motion, as Motion is presupposed in Matter, and Matter in Time, and Time in Space; but the implications of the first and simplest form of knowledge are not at first discerned, and, hence, Force is the last element in the scientific conception of the world which emerges into explicitness.

And this brings us to Mr. Spencer's concluding remarks upon the relation of Force to the other elements he has endeavored to account for. Space, Time, Matter, and Motion "are either built up of, or abstracted from, experiences of Force," and these "supply at once the materials whence the forms of relations are generalized, and the related objects built up. * * * Thus all other modes of consciousness are derivable from experiences of Force; but experiences of Force are not derivable from anything else." [6]

It would be tedious to repeat what has been already said as to the unwarrantable identification of the conception of Force with supposed sensations of Force. In place of this, two remarks of a more general character may be made. In the first place, there is a sense in which it may be said that everything is reducible to "experiences of Force," while these are not themselves reducible to anything else. Taking the conception of Nature as it exists for the scientific man, and asking what are the elements it presupposes in their connection with each other, we shall be led to say that the conception of Force comprehends under it manifold relations, which it reduces to a higher unity. The conception of Nature, as a system of forces, is more perfect than the conception of it as a congeries of material things endowed with the capacity of motion, or than the conception of it as simply a world in Space and Time. In this sense it may be said that in Force we reach a conception that cannot legitimately be brought under any other conception. But it must be observed that, in this way of looking at the matter, Force, so far from being incomprehensible, is the most comprehensible of all. Intelligence is more at home when it grasps external nature as a world in which Force manifests itself in an infinite variety of ways than when it conceives of Nature as arrested in exclusive material things, only externally related to each other by the superficial bonds of Space and Time, or by the more definite bond of Motion. The only way in which Force can seem to be more alien to intelligence than nature in its lower forms is when we try to conceive of it as a mysterious something existing apart from its manifestations, for then it is stripped of all the determinations which give it meaning. The true definition of Force is to be found in the infinite relations between material things which constitute the world as real.

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[6] First Principles, p. 169, sec. 50.

And this leads us to remark, secondly, that, however perfect the conception of Force or its manifestations may be, as a definition of external nature, it is yet but a stage in the complete comprehension of the universe as a whole. The only category which is adequate to reality in its completeness is self-conscious intelligence. Until intelligence has advanced to the comprehension of itself, as the first presupposition of all reality, and the last definition of it, it must be afflicted and goaded on by unrest to seek its own realization. The notion of the world as Force still leaves a distinct trace of the independence of Nature and Intelligence, and, until this tacit dualism is completely transcended, intelligence cannot be satisfied that its knowledge is undeniably real. Hence the necessity of advancing to a higher stage of thought than that which results even from a systematic comprehension of the elements of reality involved in the scientific conception of Nature. The further development of this thought must, however, be left to a future occasion, when we propose to examine Mr. Spencer's account of the indestructibility of matter and the persistence of force.